



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/643,420

08/19/2003

Arya Reza Behzad

BP2474

4570

51472

7590

05/03/2006

GARLICK HARRISON & MARKISON LLP

P.O. BOX 160727

AUSTIN, TX 78716-0727

EXAMINER

VO, NGUYEN THANH

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/643,420	BEHZAD, ARYA REZA	
	Examiner	Art Unit	
	Nguyen T. Vo	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-9 and 12-16 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 11 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10-11, 18-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 10-11, the recitation “the RF transceiver integrated circuit” at line 1 lacks clear antecedent basis. In order to overcome this rejection, it is suggested that the claims 10-11 should depend on claim 6 instead of claim 1. For the purpose of examination, claims 10-11 are treated in this action as if they depend on claim 6.

As to claims 18-21, they are indefinite because they depend on non-existed claims 25-26. In order to overcome this rejection, it is suggested that the claims 18-21 should depend on claim 17. For the purpose of examination, claims 18-21 are treated in this action as if they depend on claim 17.

Still as to claim 21, the recitation “the local oscillator” at the end of the claim should be changed to –the local oscillator means—in order to be consistent with “the local oscillator means” in claim 17.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shi (US 2003/0138032, cited by examiner).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 17-21, the claims refer to the embodiment of figure 3 of the present application. Since figure 7 of Shi is the same as figure 3 of the present application, Shi clearly discloses all the claimed limitations.

5. Claims 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shi (US 2004/0137852, cited by examiner).

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 17-21, the claims refer to the embodiment of figure 3 of the present application. Since figure 3 of Shi is the same as figure 3 of the present application, Shi clearly discloses all the claimed limitations.

6. Claims 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shi (7,020,449, cited by examiner).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 17-21, the claims refer to the embodiment of figure 3 of the present application. Since figure 8 of Shi is the same as figure 3 of the present application, Shi clearly discloses all the claimed limitations.

7. Claims 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shi (US 2003/0138034, cited by examiner).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claims 17-21, the claims refer to the embodiment of figure 3 of the present application. Since figure 9 of Shi is the same as figure 3 of the present application, Shi clearly discloses all the claimed limitations.

**8. *Since the above applied references have a common assignee with the instant application, they are not prior art under 35 U.S.C. 103.***

9. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ashby (6,029,060, cited by examiner).

As to claim 1, Ashby discloses in figure 3 a multi-stage mixer module, comprising a transconductance block 302 for receiving an input signal  $V_{in}$  having a frequency, the transconductance block for converting the input signal from a voltage to a current to produce a first mixing stage input signal in a current domain (see the voltage-to-current converter 302); a first frequency mixing stage 304 coupled to receive a first reference signal LO1 and the first mixing stage input signal, the first mixing stage producing a second mixing stage input signal in the current domain (see the output of mixer 304); a second frequency mixing stage 310 coupled to receive a second reference signal LO2 and the second mixing stage input signal, the second mixing stage producing a second mixing stage output signal in the current domain (see the output of mixer 310); and an output stage 312 coupled to receive the second mixing stage output signal, the output stage for converting the second mixing stage output signal from the current domain to a voltage domain to produce a mixer module output signal (see the current-to-voltage converter 312). See also column 3 lines 7-46. Ashby thus discloses all the claimed limitations.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashby.

As to claims 2-3, Ashby fails to disclose the values of the first and second reference signals LO1 and LO2 as claimed. Those skilled in the art, however, would have recognized that the above claimed limitations would not render the claims patentable over Ashby. The reason is that they would merely depend on the operating ranges one would like to operate the multi-stage mixer in. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ashby as claimed, in order to increase the dynamic range of the multi-stage mixer.

***Double Patenting***

12. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

13. Claims 17-21 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 25-28 and 35 of copending Application No. 10/255,378. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

As to claim 17, it claims the same invention as that of claim 25 of the above copending application.

As to claim 18, it claims the same invention as that of claim 26 of the above copending application.

As to claim 19, it claims the same invention as that of claim 27 of the above copending application.

As to claim 20, it claims the same invention as that of claim 28 of the above copending application.

As to claim 21, it claims the same invention as that of claim 35 of the above copending application.

***Allowable Subject Matter***

14. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 4-5, the applied references fail to disclose or render obvious that a sum of a frequency value of the first reference signal, when added to a frequency value of the second reference signal, is equal to an uncompensated local oscillation signal frequency value, as specified in the claims.



15. Claims 6-9, 12-16 are allowed.

As to claims 6, 16, the applied references fail to disclose or render obvious a local oscillator comprising a two step mixing stage as specified in the claims.

As to claim 12, the applied references fail to disclose or render obvious a method for down-converting a received RF signal as specified in the claim.

16. Claims 10-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vagher (6,021,323) discloses direct conversion receiver having current-to-voltage converter 56.

Cheng (US 2003/0078011); Puknat (6,708,044); Taga (5,440,268) and Anand (6,850,745) disclose automatic frequency control.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2618

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen Vo



4-24-2006

**NGUYEN T. VO**  
**PRIMARY EXAMINER**